addition to transporting the separated carriers. Accordingly, an alternate embodiment of the present invention (not depicted) in a multilayer device would include the cathode on the bottom. The inner pair of organic materials may each be an organic dye chosen to have photosensitivity in a desired region of the spectrum. Since the Alq_3 / α-NPD pair is photosensitive in the ultraviolet (UV) part of the spectrum, multilayer device 600 with this organic pair combination is a particular exemplary embodiment of a UV photodetector. Further, the dye pair is preferably chosen to have a LUMO-HOMO gap offset as described above. In yet another embodiment (not shown) one or both of the outer pair of organic layers is replaced with a thin layer, approximately 50-150Å of Mg:Ag alloy which acts as a charge transfer, extraction, and protective cap layer.--

In the Claims:

Please amend claim 29 and add new claims 64-84 as follows:

29. (thrice amended) An organic photosensitive optoelectronic device comprising:

a substrate having a first major surface and a second major surface; and

at least two subcells in superposed relationship upon said first major surface of said substrate;

wherein at least one of said subcells comprises:

two transparent metal substitute electrode layers in superposed relationship upon said first major surface of said substrate; and

four photoconductive organic layers, having an inner pair and an outer pair, disposed between said two transparent metal substitute electrode layers.

64. (new) The device of claim 31 wherein at least one of said outer pair of said four photoconductive organic layers comprises an organic molecular crystal material.

65. (new) The device of claim 31 wherein at least one of said outer pair of said four photoconductive organic layers comprises a polymeric material.

66. (new) The device of claim 31 wherein at least one of said outer pair of said four photoconductive organic layers comprises a material selected from the group consisting of phthalocyanine compounds, perylene compounds, polyacene compounds, and porphyrin compounds.

67. (new) The device of claim 31 wherein at least one of the two transparent metal substitute electrode layers consists of a conductive oxide.

68. (new) The device of claim 67 wherein the conductive oxide is selected from the group consisting of indium tin oxide, tin oxide, gallium indium oxide, zinc oxide and zinc indium oxide.

69. (new) The device of claim 31 wherein at least one of the two transparent metal substitute electrode layers consists of a conductive polymer.

70. (new) The device of claim 29 wherein the at least two subcells have external electrical connections.

71. (new) The device of claim 70 wherein the at least two subcells are electrically connected in parallel.

72. (new) The device of claim 29 wherein each of the at least two subcells comprises:

two transparent metal substitute electrode layers in superposed relationship upon said first major surface of said substrate; and

four photoconductive organic layers, having an inner pair and an outer pair, disposed between said two transparent metal substitute electrode layers.

73. (new) An organic photosensitive optoelectronic device comprising:

a substrate having a first major surface and a second major surface; and

at least two subcells in superposed relationship upon said first major surface

of said substrate;

wherein each of the at least two subcells has external electrical connections; and

wherein at least one of said subcells comprises:

two transparent metal substitute electrode layers in superposed relationship upon said first major surface of said substrate; and

at least one photoconductive organic layer disposed between said two transparent metal substitute electrode layers.

74. (new) The device of claim 73 wherein the at least two subcells are electrically connected in parallel.

75. (new) The device of claim 74 wherein each of the at least two subcells comprises:

two transparent metal substitute electrode layers in superposed relationship upon said first major surface of said substrate; and

at least one photoconductive organic layer disposed between said two transparent metal substitute electrode layers.

76. (new) The device of claim 75 wherein the thickness of each of the at least two subcells is optimized for maximum internal quantum efficiency and the total number of said subcells comprised in the organic photosensitive optoelectronic device is limited by that which produces no further increase in the external quantum efficiency.

77. (new) The device of claim 73 wherein at least one of the two transparent metal substitute electrode layers consists of a conductive oxide.

78. (new) The device of claim 73 wherein at least one of the two transparent metal substitute electrode layers consists of a conductive polymer.

79. (new) The device of claim 73 wherein the at least one photoconductive organic layer is